NewsRelease

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Langley Research Center
Hampton, Virginia 23681-2199

Kimberly W. Land
(757) 864-9885

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Size doesn't matter to MIT's micro-engines

Super-size your order of fries? Get the Biggie-sized soft drink? Why not? It's a better deal, isn't it? The belief is that "bigger is better."

But according to Dr. Alan Epstein, size doesn't always matter. The Massachusetts Institute of Technology (MIT) is developing micro-electro-mechanical systems-based gas turbine engines, turbogenerators and miniature rocket engines.

Epstein, the R.C. Maclaurin professor of Aeronautics and Astronautics, head of the Propulsion and Energy Conservation Division and director of MIT's Gas Turbine Laboratory, will present " The MIT MicroEngine Project" at a colloquium at 2 p.m. Tuesday, Jan. 9, at NASA Langley's H.J.E. Reid Conference Center.

The size of a button, these "mini" engines are based on micro-high-speed rotating machinery with power densities nearing those of their full-sized brethren. The MIT micro-gas turbine is a 1-cm diameter by 3-mm thick silicon heat engine designed to produce up to 20 watts of electric power, with later versions producing up to 100 watts.

Epstein will discuss the applications for these micro-engines and portable power that offers advantages in cost, redundancy and standardization. He will also describe assembly as well as structures and materials used to produce these tiny engines.

Epstein received all of his degrees in aeronautics and astronautics from MIT, finishing with a doctorate in 1975. He has been on faculty since 1980. His technical interests are energy conservation, propulsion, and turbo-machinery including micro heat engines and turbine heat transfer. Epstein has written over 70 publications and received four best paper awards from the International Gas Turbine Institute and the American Society of Mechanical Engineers Gas Turbine Award.

<u>Media Briefing:</u> A media briefing will be held at 1:15 p.m. at the H.J.E. Reid Conference Center, 14 Langley Blvd., at NASA Langley Research Center. Members of the media who wish to attend should contact Kimberly W. Land (757) 864-9885.

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